

REMARKS

The Examiner alleges that the application contains three inventions and that restriction is required under 35 U.S.C. §121. In particular, it is asserted that claims 1-11 are drawn to an apparatus of a stator; that claims 12-14 are drawn to an apparatus of a blower; and that claims 15-17 are drawn to a method of making a stator.

Upon further consideration of the restriction requirement, the Applicants desire to proceed with election of Group I, claims 1-11. Accordingly, claims 12-17 have been cancelled with the right of the Applicants to file a divisional application being reserved.

Claim 1 has been rejected under 35 U.S.C. §102(b) as being anticipated by the patent to Suzuki et al., U.S. Patent No. 5,508,578. The remaining claims 2-11 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Suzuki et al. in view of the patent to Sakashita et al., U.S. Patent No. 5,323,074.

The Applicants and their undersigned Attorney have carefully reviewed the references, the Examiner's comments and the present application and respectfully request entry of amendments to further distinguish and clarify the present invention from the art made of record.

Independent claim 1 now sets forth that the encapsulated stator assembly includes at least one stand-off post extending from a single covering layer that partially encloses and maintains registration of a plurality of like laminations. The claim further sets forth that the stand-off post includes a deflectable head for receipt of an appropriate receptacle. The purpose of the deflectable post in the present invention is to allow for quick assembly of the completed stator assembly to a circuit board or like holding device or removal if necessary in the assembly process.

The Examiner alleges that the posts 15 shown in the Suzuki patent are equivalent to the deflectable posts of the present invention. In distinct contrast to the claimed invention, the posts 15 of Suzuki are for the alignment of the stator core 12 to a plate 1. However, it is clear from Column 4, lines 16-18 of Suzuki that the post or boss 15 is permanently glued or melted to secure the stator core 12 to the plate 1. In distinct contrast, the Applicants have eliminated the melting or gluing operation disclosed by Suzuki by utilizing a deflectable head that is insertable into a circuit board hole with minimal force and which is easily

attached or detached as needed. Accordingly, each and every element of the claimed invention is not taught in the prior art references made of record and therefore claim 1 is allowable. With it being the position of the Applicants that claim 1 is allowable all claims depending therefrom are likewise deemed allowable.

Dependent claim 2 has been amended to set forth that two alignment features are provided on an inner diameter of the stamping to further to enhance the alignment of the laminations during the application of the covering layer. The patent to Sakashita only discloses a single alignment and the patent to Suzuki does not teach any alignment features necessary to encapsulate a loose plurality of laminations. Accordingly, the art made of record does not teach or suggest the use of two alignment features within a lamination stamping. Therefore, claim 2 is allowable on its own merit.

Dependent claim 5 has been amended to set forth the particular structural features of the deflectable head which includes a tapered shoulder that extends to an annular rib that forms a groove. The tapered shoulder and the annular rib have a slot therethrough to allow inward compression on the shoulder and the rib when inserted into an appropriate receptacle that fits into the groove. In other words, the shoulder and rib are deflected inwardly as they pass through the circuit board hole. The shoulder and rib return to their undeflected state and the circuit board is retained within the groove. Clearly, such structural features are not taught or suggested by any of the references made of record and accordingly claim 5 is allowable on its own merit.

Applicants respectfully request entry of new claims 18-25. Independent claim 18 sets forth an encapsulated stator assembly with a plurality of like laminations covered by a single covering layer and further in that the layer comprises at least one collar axially extending therefrom and proximally aligned with the inner diameter and wherein a plurality of windings are wound around the single covering layer and further wherein the plurality of windings extend no higher than the height of the collar. Such a structural feature is not present in Suzuki where it can be seen that the windings 13 extend higher than the collar and which may give rise to undesired electrical arcing between the windings and the auto-rotor 5. In the present invention, the purpose of having the collar extend higher than the level of the windings is to provide an insulation barrier to arcing between the windings and the inner

diameter of the stampings. The high collar also provides a visual guide or reference to the person assembling the windings to the stator to ensure that the windings do not extend above a predetermined distance. If the windings extend too high, arcing between the windings and the rotating rotor cup 130 which is seen in Fig. 7, may occur. Such a feature is not taught or suggested by any of the references made of record and accordingly it is respectfully submitted that claim 18 is allowable. Likewise, all claims depending therefrom are deemed allowable.

In regard to new independent claim 21, the Applicants set forth a claim for a high voltage encapsulated stator assembly comprising a plurality of like laminations stacked in registration with one another wherein each lamination comprises a stamping having an inner diameter with at least one alignment feature and a plurality of teeth extending radially outwardly from the stamping and wherein each of the plurality of teeth has an edge projection that collectively form an outer diameter with gaps disposed therebetween.

The claim further sets forth that a single covering layer partially encloses and maintains registration of the plurality of like laminations wherein the layer comprises a creepage wall extending axially only from an outer periphery of the layer at the edge projections but not into the gaps. This is in distinct contrast to the teachings of Suzuki which show in Fig. 7 that the alleged creepage walls extend up from the layer in both the axial and radial directions. Accordingly, the gap between the projections is narrowed. In the present instance, the maintaining of a gap is essential to allow for machine insertion of the windings. And in a high voltage application, the need to have the edge projections extend as close to one another as possible is required in order to obtain the desired performance of the high voltage stator assembly. Accordingly, there is no teaching or suggestion in Suzuki or any of the other prior art made of record for providing a creepage wall that extends only axially and not radially. Therefore, it is respectfully submitted that claim 21 is allowable on its own merit.

It is also respectfully submitted that dependent claim 24 is allowable on its own merit inasmuch as none the cited references disclose a tooth nub that projects inwardly to expose a surface of the lamination that is at the end of the lamination stack. The Examiner has made a conclusory assertion regarding this particular structural feature as being taught by

the Suzuki reference, but a review of this reference provides no teaching or suggestion that such a feature is present. Therefore, it is respectfully submitted that new dependent claim 24 is allowable on its own merit.

In regard to dependent claim 25, the Applicants now set forth that the layer has a material thickness of least .015 inches and a voltage breakdown value of at least 1800 volts AC. This is in distinct contrast to the references made of record which are for low voltage disk drives and not for high voltage applications. Evidence of this can be found at Column 3, lines 50-58, of the '578 patent which sets forth that the thickness protruding from the portions of the magnetic pole 10 are sufficiently small such that the height of the thickness is less than 0.1 millimeters which is equivalent to approximately .004 inches. In fact, the '578 patent appears to desire the ability to have a thin insulation layer 133 so as to reduce the weight of the part and provide a cost savings in the amount of material used. Therefore, it is respectfully submitted that dependent claim 25 is allowable on its own merit.

The Applicants respectfully submit new drawings for Figs. 5 and 7 to correct errors noted in review of the present application. In particular, in Fig. 5 the designating numeral 33 has been changed to numeral 32 and in Fig. 7 the lead line for element 124 is changed to correctly point to the motor windings. No new matter is added by these corrections and their acceptance is respectfully requested.

Based upon the foregoing the Applicants respectfully request allowance of claims 1-9 and 18-25.

In the event a fee is required with the filing of this Amendment and the requisite fee is not enclosed or is deemed insufficient, the Assistant Commissioner of Patents and Trademarks is hereby authorized to withdraw the required funds from Deposit Account No. 18-0987. If a withdrawal is required from Deposit Account No. 18-0987, the undersigned attorney respectfully requests that the Assistant Commissioner of Patents and Trademarks cite Attorney Docket Number 4570.85 for billing purposes.

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If the Examiner has any questions or comments or has any suggestions for placing the claims in better form for allowance a telephone call to the undersigned Attorney would be appreciated.

Respectfully submitted,



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Attachment - replacement drawing sheets